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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,403	07/21/2003	Kevin E. Fu	200311171-1	6808

22879 7590 04/04/2007  
HEWLETT PACKARD COMPANY  
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INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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CHEN, SHIN HON

ART UNIT	PAPER NUMBER
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2131

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/624,403

Applicant(s)

FU ET AL.

Examiner

Shin-Hon Chen

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \*c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-21 have been examined.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 2, 4-6, and 8-13 and 15-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Hardy et al. U.S. Pub. No. 20020152392 (hereinafter Hardy).
4. As per claim 1, Hardy discloses a method of windowed backward key generation, comprising: a) providing information to a user that allows determining a limited number of previous keys in a series of keys from a later key in the series (Hardy: [0007]: provide keys in sequential order backward or forward; [0015]: provide split to user); b) generating a key in the series, based at least in part on said information provided to said user (Hardy: [0015]: split is used to generate new key); c) providing said key in the series to the user (Hardy: [0015]: initial key A is provided to user); and d) said user determining at least one key in the limited number of previous keys in the series by applying said information to said key in the series provided to the user (Hardy: [0021]: generate different preceding or subsequent keys sequentially or non-sequentially based on the initial key and updated split).

Art Unit: 2131

5. As per claim 2, Hardy discloses the method of claim 1. Hardy further discloses providing a key rotation element that is forward rotatable by said user but is not backward rotatable (Hardy: [0021]: key is forward rotatable when the key split is intended for forward rotation).

6. As per claim 4, Hardy discloses the method of claim 2. Hardy further discloses the method comprising: e1) generating a new key rotation element (Hardy: [0021]: generate updated split); e2) generating a new key based, in part, on said new key rotation element (Hardy: [0021]: generate new key); and e3) distributing said new key to non-revoked users (Hardy: [0021]: user can now use the new key).

7. As per claim 5, Hardy discloses the method of claim 1. Hardy further discloses wherein said a) further comprises providing a secret share and a key rotation catalyst to said user (Hardy: [0021]: the token and split), wherein said secret share and said key rotation catalyst allow said user to generate a next key in the series provided sufficient public information is available (Hardy: [0021]: updated split can be public).

8. As per claim 6, Hardy discloses the method of claim 5. Hardy further discloses further comprising: e) publishing at least one public share, wherein the next key in the series is determinable based on the key rotation catalyst, the secret share, and the at least one public share (Hardy: [0021]: the updated split, the token, and the initial key split).

Art Unit: 2131

9. As per claim 8-13 and 15-21, claims 8-13 and 15-21 encompass the same scope as claims 1, 2, and 4-6. Therefore, claims 8-13 and 15-21 are rejected based on the same reasons set forth above in rejecting claims 1, 2, and 4-6.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardy.

12. As per claim 3, Hardy discloses the method of claim 1. Hardy further discloses that the operation involved in the key generation is logical addition (Hardy: [0021]: exclusive OR). Hardy does not explicitly disclose wherein said a) comprises providing to the user a key rotation exponent that is used to determine a previous key in the series from a later key in the series by exponentiating said later key by said key rotation exponent. However, it would have been obvious to one having ordinary skill in the art to utilize exponentiation in place of the logical addition in computing updated key because mathematical formulas can be interchangeably used to compute cryptographic keys when the underlying concept permits the operation to be successful.

Art Unit: 2131

13. As per claim 7 and 14, Hardy discloses the method of claims 5 and 12. Hardy does not explicitly disclose revoking a user by publishing a version of the revoked user's secret share. However, it would have been obvious to one having ordinary skill in the art to publish the private share of the revoked user because the published private share of revoked user undergoing logical addition with private share of the revoked user would generate useless data.

### *Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Candelore U.S. Pat. No. 6363149 discloses method for accessing stored digital programs by deriving past keys.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shin-Hon Chen whose telephone number is (571) 272-3789. The examiner can normally be reached on Monday through Friday 8:30am to 5:30pm.

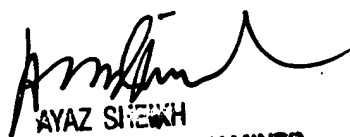
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2131

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shin-Hon Chen  
Examiner  
Art Unit 2131

SC

  
AYAZ SHEKH  
SUPERVISORY PATENT EXAMINER  
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